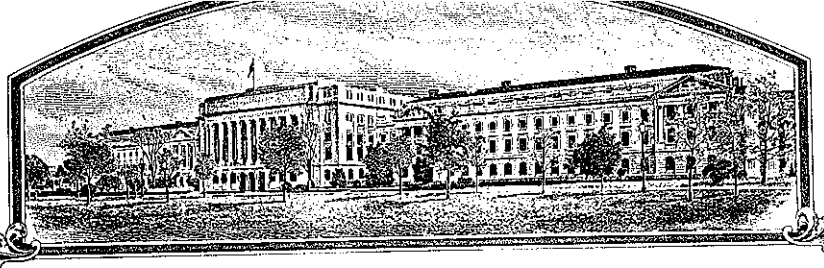
No. 8100004



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Pioneer Hi-Bred International, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS PRESCRIBED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

COMMON WHEAT

'PR2360'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of* Washington *this* 14th *day of* January *in the year of our Lord one thousand nine hundred and* eighty-two.

PLANT VARIETY PROTECTION OFFICE · U.S. DEPARTMENT OF AGRICULTURE

Attest:

Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

Secretary of Agriculture

FORM GR-470
(1-76)

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
GRAIN DIVISION
PLANT VARIETY PROTECTION OFFICE
NATIONAL AGRICULTURAL LIBRARY
BELTSVILLE, MARYLAND 20705

FORM APPROVED
OMB NO. 40-R3712

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

INSTRUCTIONS: *See Reverse.*

1a. TEMPORARY DESIGNATION OF VARIETY: X6753	1b. VARIETY NAME: PR2360	FOR OFFICIAL USE ONLY PV NUMBER: 8100004	
2. KIND NAME: wheat	3. GENUS AND SPECIES NAME: Triticum aestivum L.	FILING DATE: 10/20/80	TIME: 2:00 A.M. P.M.
4. FAMILY NAME (BOTANICAL): Gramineae	5. DATE OF DETERMINATION: 1. September, 1977 2. October, 1978	FEE RECEIVED: $ 500.00 $ 250.00 $	DATE: 10/20/80 10/22/81
6. NAME OF APPLICANT(S): Pioneer Hi-Bred International Inc. Plant Breeding Division	7. ADDRESS (*Street and No. or R.F.D. No., City, State, and ZIP Code*): Dept. of Cereal Seed Breeding Route 2 Hutchinson, Ks. 67501		8. TELEPHONE AREA CODE AND NUMBER: (316) 662-5439
9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: (*Corporation, partnership, association, etc.*) Corporation	10. IF INCORPORATED, GIVE STATE AND DATE OF INCORPORATION: Iowa		11. DATE OF INCORPORATION: May, 1926

12. Name and mailing address of applicant representative(s), if any, to serve in this application and receive all papers:

Dr. Charles Hayward, Pioneer Hi-Bred International, Inc., Plant Breeding Division, Dept. of Cereal Seed Breeding, Route 2 Hutchinson, Ks. 67501

13. CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:

- [X] 13A. Exhibit A, Origin and Breeding History of the Variety *(See Section 52 of the Plant Variety Protection Act.)*
- [X] 13B. Exhibit B, Novelty Statement.
- [X] 13C. Exhibit C, Objective Description of the Variety *(Request form from Plant Variety Protection Office.)*
- [X] 13D. Exhibit D, Additional Description of the Variety.

14A. Does the applicant(s) specify that seed of this variety be sold by variety name only as a class of certified seed? *(See Section 83(a). If "Yes," answer 14B and 14C below.)* [X] YES [ ] NO

14B. Does the applicant(s) specify that this variety be limited as to number of generations? [X] YES [ ] NO

14C. If "Yes," to 14B, how many generations of production beyond breeder seed? [X] FOUNDATION [X] REGISTERED [X] CERTIFIED

15. Does the applicant(s) agree to the publication of his/her (their) name(s) and address in the Official Journal? [X] YES [ ] NO

16. The applicant(s) declare(s) that a viable sample of basic seed of this variety will be deposited upon request before issuance of a certificate and will be replenished periodically in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

Charles Hayward
(SIGNATURE OF APPLICANT)

10-17-80
(DATE)

* Dale L. Porter (for)
(SIGNATURE OF APPLICANT)

10-17-80
(DATE)

* Dale L. Porter, Agent for Pioneer Hi-Bred International, Inc.

FORM GR-470 (Reverse)

INSTRUCTIONS

GENERAL: Send an original copy of the application, exhibits and $250.00 fee to U.S. Dept. of Agriculture, Agricultural Marketing Service, Grain Division, National Agricultural Library, Beltsville, Maryland 20705. (See Section 180.175 of the regulations and rules of practice.) Retain one copy for your files. All items on the face of the form are self-explanatory unless noted below.

ITEM

5 Give the date the applicant determined that he had a new variety based on (1) the definition in Section 41(a) of the Act and (2) the date a decision was made to increase the seed.

13a Give (1), the genealogy, including public and commerical varieties, lines, or clones used, and the breeding method. (2), the details of subsequent stages of selection and multiplication. (3), the type and frequency of variants during reproduction and multiplication and state how these variants may be identified and (4), evidence of stability.

13b Give a summary statement of the variety's novelty. Clearly state how this novel variety may be distinguished from all other varieties in the same crop. If the new variety most closely resembles one or a group of related varieties; (1) identify these varieties and state all differences objectively; (2) Attach statistical data for characters expressed numerically and demonstrate that these differences are significant; and (3) submit, if helpful, seed and plant specimens or photographs of seed and plant comparisons clearly indicating novelty.

13c Fill in the Exhibit C, Objective Description form for all characteristics, for which you have adequate data.

13d Describe any additional characteristics that are not described, or whose description cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the description of characteristics that are difficult to describe; such as; plant habit, plant color, disease resistance, etc.

14A If "YES" is specified (seed of this variety be sold by variety name only as a class of certified seed) the applicant may NOT reverse his affirmative decision after the variety has either been sold and so labeled or published or the certificate has been issued. However, if the applicant specifies "NO", he may change his choice. (See Section 180.15 of the Regulations and Rules of Practice.)

13A. Exhibit A. Origin and Breeding History of PR2360 Spring Wheat

PR2360 was developed by Pioneer Hi-Bred International, Inc., Plant Breeding Division, Glyndon Cereal Seed Research Station, Route 1, Box 128A, Glyndon, Minnesota 56547.

The abbreviated parentage of PR2360 is: TZPP/Sonora64//Crim/3/Era. A selection was made from a CIMMYT (International Maize and Wheat Improvement Center, Mexico) cross No. 19021 TZPPxSon64 4M-3Y-102M-100Y-100C. This was then crossed with the Minnesota line Crim (CI 13465). A pure line selection from this cross was then used as the female parent in a cross with Era in 1972.

The procedure used to develop PR2360 from the time of the final cross was as follows:

1972..... F1 generation.

1973..... F2 generation; space-planted and plant selections made.

1974..... F3 generation; plant selections grown in increase rows at Casselton, North Dakota. Single plant selections were taken from the increase rows.

1975..... F4 generation; small plots were grown at Casselton, North Dakota, and bulk harvested.

1976..... F5 generation; grown in observation plots at Beltrami, Minnesota. Off-types were rogued out and agronomic and disease records were taken.

1977..... F6 generation; seed from the selected increase plots was used for preliminary variety trials at two locations. Quality evaluations were made by our cereal chemist.

1978..... F7 generation; PR2360 was tested under the experimental number W6753 in the elite variety trial grown at 10 locations in North Dakota, Minnesota and South Dakota. Full milling and baking tests were conducted by our cereal chemist at Hutchinson, Kansas.

1979..... F8 generation; PR2360 underwent a second year of elite testing at 10 locations. In addition to our own laboratory, full milling and baking tests were conducted by North Dakota State University, Fargo, North Dakota.

1980..... F9 generation; third year of elite testing at 10 locations. In addition, PR2360 was entered in the Uniform Regional Hard Red Spring Wheat Nursery. Independent milling and baking tests were conducted by North Dakota State University. A preliminary three-acre seed increase was made at Yuma, Arizona during winter 1979-1980, and 125 acres of foundation seed were grown at Glyndon, Minnesota in 1980. The name PR2360 was selected for the line W6753 with sales to begin in the spring of 1982.

PR2360 has shown uniformity and stability for all traits as described in Schedule C. It is moderately sensitive to photoperiod and derives this trait from the Era parents. Breeder seed is being maintained at the Glyndon Cereal Seed Research Station.

13B. Exhibit B. Novelty Statement.

Pioneer Hi-Bred International, Inc., Plant Breeding Division, believes it is the sole, original, and first breeder of the PR2360 variety of spring wheat for which it solicits a certificate of protection.

Exhibits 13C and 13D provide information that should aid in identifying PR2360. In Exhibit 13C, Item 20, Era is cited as the variety that most closely resembles PR2360. However, the following characters would clearly differentiate PR2360 from Era:

1. PR2360 is three days earlier at heading and two days earlier at physiologic maturity than Era, on average.
2. Spikes of PR2360 are more lax and tapering than those of Era.
3. PR2360 is less sensitive to photoperiod than Era. Data derived from two years of testing are provided in Table 1.

PR2360 has shown uniformity and stability for all traits as described in Schedule C (Form GR-470-6) -- "Objective Description of Variety."

Variants of PR2360 that can be expected are: a very small number of taller plants (< 1/1,000) and plants with awns and glumes slightly darker in color than the standard type (again < 1/1,000). Beardless types (< 1/10,000) have been encountered on very rare occasions.

Table 1. Classification of PR2360 and standard hard red spring wheat cultivars for photoperiod response based on the effects of a five-hour night-interruption by a field lighting system at Yuma, Arizona, 1978-79 and 1979-80.

Variety	Delay (days) Due to Absence of Lights*		
	50% Heading	Phys. Maturity	Total Delay
		1978-79	
PR2360	10	9	19
Era	24	22	46
Olaf	27	27	54
Waldron	29	27	56
		1979-80	
PR2360	17	19	36
Butte	19	13	32
Era	21	19	40
Olaf	24	29	53
Waldron	27	30	57

*Seeded at Yuma, Arizona Nov. 1, 1978 and Nov. 6, 1979.

Night interruption commenced 3 weeks after seeding.

- Simulated long day = 5 hours of illumination, 9:30 p.m.-2:30 a.m.
- Short days = no lights

8100004

FORM APPROVED. OMB NO. 40-R3712

FORM GR-470-6
(2-15-73)

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
GRAIN DIVISION
HYATTSVILLE, MARYLAND 20782

EXHIBIT C
(Wheat)

OBJECTIVE DESCRIPTION OF VARIETY
WHEAT (*TRITICUM SPP.*)

INSTRUCTIONS: *See Reverse.*

NAME OF APPLICANT(S)
Pioneer Hi-Bred International, Inc

ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)*
Plant Breeding Division
Dept. of Cereal Seed Breeding
Route 1, Box 128 A, Glyndon, Mn. 56547

FOR OFFICIAL USE ONLY

PVPO NUMBER
8100004

VARIETY NAME OR TEMPORARY DESIGNATION
PR2360

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (e.g. [0][8][9] or [0][9]) when number is either 99 or less or 9 or less.

1. KIND:

[1] 1 = COMMON 2 = DURUM 3 = EMMER 4 = SPELT 5 = POLISH 6 = POULARD 7 = CLUB

2. TYPE:

[1] 1 = SPRING 2 = WINTER 3 = OTHER *(Specify)* _____

[2] 1 = SOFT 2 = HARD 3 = OTHER *(Specify)* _____

[2] 1 = WHITE 2 = RED 3 = OTHER *(Specify)* _____

3. SEASON - NUMBER OF DAYS FROM EMERGENCE TO:

[0][4][9] FIRST FLOWERING

[0][5][2] LAST FLOWERING

4. MATURITY *(50% Flowering)*:

[0][1] NO. OF DAYS *EARLIER* THAN .....

[3] 1 = ARTHUR 2 = SCOUT 3 = CHRIS 4 = LEMHI 5 = NUGAINES 6 = LEEDS

[ ][ ] NO. OF DAYS *LATER* THAN .....

[ ]

5. PLANT HEIGHT *(From soil level to top of head)*:

[0][7][2] CM. HIGH

[ ][ ] CM. TALLER THAN .....

[ ] 1 = ARTHUR 2 = SCOUT 3 = CHRIS 4 = LEMHI 5 = NUGAINES 6 = LEEDS

[1][9] CM. SHORTER THAN .....

[3]

6. PLANT COLOR AT BOOTING *(See reverse)*:

[2] 1 = YELLOW GREEN 2 = GREEN 3 = BLUE GREEN

7. ANTHER COLOR:

[1] 1 = YELLOW 2 = PURPLE

8. STEM:

[1] Anthocyanin: 1 = ABSENT 2 = PRESENT

[2] Waxy bloom: 1 = ABSENT 2 = PRESENT

[2] Hairiness of last internode of rachis: 1 = ABSENT 2 = PRESENT

[1] Internodes: 1 = HOLLOW 2 = SOLID

[0][3] NO. OF NODES *(Originating from node above ground)*

[1][9] CM. INTERNODE LENGTH BETWEEN FLAG LEAF AND LEAF BELOW

9. AURICLES:

[1] Anthocyanin: 1 = ABSENT 2 = PRESENT

[1] Hairiness: 1 = ABSENT 2 = PRESENT

10. LEAF:

[2] Flag leaf at booting stage: 1 = ERECT 2 = RECURVED 3 = OTHER *(Specify)*: _____

[2] Flag leaf: 1 = NOT TWISTED 2 = TWISTED

[2] Hairs of first leaf sheath: 1 = ABSENT 2 = PRESENT

[2] Waxy bloom of flag leaf sheath: 1 = ABSENT 2 = PRESENT

[1][1] MM. LEAF WIDTH *(First leaf below flag leaf)*

[2][6] CM. LEAF LENGTH *(First leaf below flag leaf)*:

8100004 OCT 20 1980

FORM GR-470-6 (REVERSE)

11. HEAD:

[1] Density: 1 = LAX 2 = DENSE

[1] Shape: 1 = TAPERING 2 = STRAP 3 = CLAVATE 4 = OTHER (Specify) _____

[4] Awnedness: 1 = AWNLESS 2 = APICALLY AWNLETED 3 = AWNLETED 4 = AWNED

[1] Color at maturity: 1 = WHITE 2 = YELLOW 3 = PINK 4 = RED 5 = BROWN 6 = BLACK 7 = OTHER (Specify): _____

[0][9] CM. LENGTH [1][1] MM. WIDTH

12. GLUMES AT MATURITY:

[2] Length: 1 = SHORT (CA. 7 mm.) 2 = MEDIUM (CA. 8 mm.) 3 = LONG (CA. 9 mm.)

[2] Width: 1 = NARROW (CA. 3 mm.) 2 = MEDIUM (CA. 3.5 mm.) 3 = WIDE (CA. 4 mm.)

[1] Shoulder shape: 1 = WANTING 2 = OBLIQUE 3 = ROUNDED 4 = SQUARE 5 = ELEVATED 6 = APICULATE

[3] Beak: 1 = OBTUSE 2 = ACUTE 3 = ACUMINATE

13. COLEOPTILE COLOR:

[1] 1 = WHITE 2 = RED 3 = PURPLE

14. SEEDLING ANTHOCYANIN:

[1] 1 = ABSENT 2 = PRESENT

15. JUVENILE PLANT GROWTH HABIT:

[2] 1 = PROSTRATE 2 = SEMI-ERECT 3 = ERECT

16. SEED:

[1] Shape: 1 = OVATE 2 = OVAL 3 = ELLIPTICAL

[1] Cheek: 1 = ROUNDED 2 = ANGULAR

[3] Brush: 1 = SHORT 2 = MEDIUM 3 = LONG

[1] Brush: 1 = NOT COLLARED 2 = COLLARED

[2] Phenol reaction (See instructions): 1 = IVORY 2 = FAWN 3 = LT. BROWN 4 = BROWN 5 = BLACK

[3] Color: 1 = WHITE 2 = AMBER 3 = RED 4 = PURPLE 5 = OTHER (Specify) _____

[0][6] MM. LENGTH [0][3] MM. WIDTH [2][8] GM. PER 1000 SEEDS

17. SEED CREASE:

[1] Width: 1 = 60% OR LESS OF KERNEL 'WINOKA' 2 = 80% OR LESS OF KERNEL 'CHRIS' 3 = NEARLY AS WIDE AS KERNEL 'LEMHI'

Narrow

[1] Depth: 1 = 20% OR LESS OF KERNEL 'SCOUT' 2 = 35% OR LESS OF KERNEL 'CHRIS' 3 = 50% OR LESS OF KERNEL 'LEMHI'

Shallow

18. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

[2] STEM RUST (Races) 151QSH; 15 TNM

[1] LEAF RUST (Races) Prevalent races

[0] STRIPE RUST (Races) _____

[2] LOOSE SMUT

[2] POWDERY MILDEW

[0] BUNT

[ ] OTHER (Specify) _____

19. INSECT: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

[0] SAWFLY

[0] APHID (Bydv.)

[0] GREEN BUG

[0] CEREAL LEAF BEETLE

[ ] OTHER (Specify) _____

HESSIAN FLY RACES: [0] GP [0] A [0] B [0] C [0] D [0] E [0] F [0] G

20. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering	Era	Seed size	Era
Leaf size	Era	Seed shape	Era
Leaf color	Era	Coleoptile elongation	Era
Leaf carriage	Era	Seedling pigmentation	Era

INSTRUCTIONS

GENERAL: The following publications may be used as a reference aid for the standardization of terms and procedures for completing this form:

(a) L.W. Briggle and L. P. Reitz, 1963, Classification of Triticum Species and Wheat Varieties Grown in the United States, Technical Bulletin 1278, United States Department of Agriculture.

(b) W.E. Walls, 1965, A Standardized Phenol Method for Testing Wheat Seeds for Varietal Purity, contribution No. 28 to the handbook of seed testing prepared by the Association of Official Seed Analysts. *(See attachment.)*

LEAF COLOR: Nickerson's or any recognized color fan should be used to determine the leaf color of the described variety.

13D. Exhibit D. Botanical Description of PR2360

PR2360 is a common Hard Red Spring Wheat, *Triticum aestivum L.*

PR2360 averaged 1-2 days earlier than Olaf and 3-4 days earlier than Era in flowering, based upon nursery trial data during the three-year period 1978-1980. At Glyndon, Minnesota, the average number of days from seeding to first flowering was 53.3, 54.6 and 56.9 days for PR2360, Olaf and Era respectively (mean of 6 location/years). The corresponding averages for days from seeding to physiologic maturity were 91.9, 92.5 and 92.9 for PR2360, Olaf and Era respectively.

PR2360 is a semidwarf variety with an average height of 72 cm, the same height as Era, and about 3 cm shorter than Olaf.

At booting stage the plant color of PR2360 is green, similar to Era. Anthocyanin is not present in the stems. In the late boot stage a light waxy bloom occurs on the stem, becoming less apparent after flowering. Auricles are glabrous and anthocyanin is absent. Internodes of PR2360 are hollow. Stems are strong, as evidenced by the small amount of lodging that occurs (Table 2), and are yellow at harvest. Normally three stem nodes are present above ground. Internode length between the flag leaf and the leaf below is 19 cm.

Leaves are green at the booting stage, and the flag leaf is recurved and twisted. A waxy bloom appears on the flag leaf sheath. Hairs are present on the first leaf sheath. The first leaf below the flag leaf averages 11 mm wide and 26 cm long.

Spikes are lax, tapering, awned, white and generally nodding at maturity. Awns are rough and vary from 5-8 cm in length. Spike width averages 1.1 cm wide and 9 cm long. However, both spike width and length vary with season, location and plant population. Glumes are medium width and medium length, with wanting shoulders. Beaks are acuminate.

Coleoptile color is white. Seedling anthocyanin is absent.

Kernels are red in color, ovate in shape with rounded cheeks and a narrow, shallow crease. Kernels average 6 mm long and 3 mm wide, and 1000 kernels weigh about 28 g. Of the current commercial spring wheats, Era bears the closest resemblance to PR2360 in kernel type. Phenol reaction is ~~brown~~ fawn 8/31/81

PR2360 has not been tested for Hessian fly, sawfly, aphids or cereal leaf beetle.

PR2360 is resistant to stem rust, powdery mildew, and loose smut. A trace of susceptible-type leaf rust pustules have been recorded, but spread is very slow. It has not been tested for stripe rust or bunt reaction, diseases that do not normally occur in the spring wheat region.

PR2360 has an excellent yield record when compared with the currently grown hard red spring wheats (Table 2). Yields are consistently high across a range of environmental conditions and it has been a top-yielding line when late planted. Added advantages are an earlier maturity than Olaf and Era, and superior tolerance to bacterial leaf blight (Xanthomonas translucens f. sp. undulosa).

PR2360 has excellent milling properties with a break flour yield and total flour yield above that of Era. Dough mixing properties are good, with a farinogram similar to Waldron. However, water absorption and flour protein are lower than Waldron and Olaf, but above that of Era. These data are provided in Tables 3 and 4.

Table 2. Performance of PR2360 and standard varieties grown in elite yield trials at 10 locations during the years 1978-80.

Variety	Days to 50% Head*	Days to Maturity*	Height in.	Lodging Score*	Yield (bu/ac) Region 1**	Yield (bu/ac) Region 2**	Test Wt. lbs/bu	Leaf Rust	Stem Rust
PR2360	54	93	29	8	46.5	45.1	56.2	MS-R	MR
Waldron	52	89	33	7	42.9	37.7	56.4	S	MS
Olaf	55	94	31	8	46.1	42.8	56.9	MS-R	R
Era	57	95	29	6	41.4	41.8	56.0	MS-R	R
Butte	50	90	32	5	44.2	40.2	58.2	MS-R	R
LSD (.05)	0.9	1.3	0.5	-	2.7	2.9	0.6	-	-

*Number of days from seeding to 50% heading
Number of days from seeding to physiologic maturity
Lodging score: Scale 1-9 where 9 = excellent and 1 = poor

**Region 1: Minnesota and Red River Valley locations in North Dakota (six locations)
Region 2: Locations west of the Red River Valley in North Dakota plus South Dakota (4 locations)

Table 3. Results of quality testing of PR2360 by Pioneer Quality Laboratory.

Varieties Compared	Test Wt. lbs/bu	Wheat Prot.	Flour Prot.	Flour Yield	Break Flour	Water Abs.	Loaf Vol.	Peak* Time	Mix.* Tol.
				1978					
PR2360	55.1		13.5	69.4		64.0	71.0	3.9	2.4
Waldron	55.1		14.9	67.1		67.0	78.0	3.5	1.3
Olaf	55.5		14.4	66.0		67.0	82.5	4.1	2.9
Era	53.3		14.0	67.1		64.0	75.0	3.4	1.7
				1979					
PR2360	52.4	14.8	13.3	69.8	30.9	64.0	68.0	4.0	3
Waldron	53.8	17.2	15.5	68.9	28.0	67.0	84.0	4.0	3
Olaf	54.1	17.1	14.8	66.1	27.3	68.0	86.0	4.5	5
Era	51.4	15.3	13.5	67.8	29.5	64.0	72.0	4.5	4
Butte	56.1	16.5	14.4	67.1	29.9	67.0	77.0	3.5	3

Notes: (1) A 10-location composite was used in 1978
(2) A 9-location composite was used in 1979

Locations used were: Minnesota -- Glyndon (early and late planted), Fergus Falls, Hancock (dryland and irrigated)
North Dakota -- Gilby, Langdon, Glenfield, Bismarck
South Dakota -- Frankfort

*Peak time and mixing tolerance were determined with a mixograph. Time = minutes; Tolerance = Scale of 1-9 where 9 = excellent and 1 = very poor.

Table 4. Results of quality testing of PR2360 by North Dakota State University, Fargo, North Dakota.

Varieties Compared	Test Wt. lbs/bu	Wheat Prot.	Flour Prot.	Flour Yield	Ash	Water Abs.	Loaf Vol.	Grain/ Text.	Crumb Color	Farin. Class	Peak* Time	Mix.* Tol.	MTI*
						1979							
PR2360	58.2	13.4	12.5	71.0	0.43	60.9	940	7.0	7.0	6	9.0	11.5	20
Waldron	57.2	15.6	14.7	69.2	0.46	62.4	990	9.0	8.0	5	7.0	9.0	35
Olaf	58.1	15.0	14.0	68.2	0.42	63.0	905	8.0	8.0	6	7.0	9.0	35
						1980							
PR2360	58.7	14.2	13.1	72.6	0.44	61.4	910	7.5	7.5	8	13.0	18.0	10
Len	58.5	15.4	14.6	70.0	0.43	64.1	950	8.0	7.0	8	14.5	18.0	10
Era	58.6	13.7	12.9	70.8	0.47	61.1	895	7.5	8.0	7	11.5	16.0	15

Notes: (1) A 10-location composite was used in 1979
(2) A 9-location composite was used in 1980

Locations used were: Minnesota -- Glyndon (early and late planted), Fergus Falls, Hancock (dryland and irrigated). Irrigated 1979 only.
North Dakota -- Gilby, Langdon (1979 only), Glenfield, Bismarck, Casselton (1980 only).
South Dakota -- Frankfort

*Peak time and mixing tolerance were determined with a farinograph. Time = minutes; Tolerance = time in minutes that curve remains horizontal.